



**BIOMASS**  
CASE STUDY



**EXERGY**  
THE RADIAL OUTFLOW TURBINE

**Client name**

Energia Vulture Alto Bradano S.r.l.

**Plant name**

EVA Biomass

**Plant location**

Venosa (PZ), Italy

**Date of implementation**

December 2012

**Plant size**

990 kWe

**Application**

Biomass

**Model used**

EP 110 ERS

**Quantity of biomass**

16000 t/year

**Electrical efficiency of the ORC**

24%

**Electrical generation gross**

990 kWe

**Thermal medium**

Thermal Oil (300-200 °C)

**Water or cooling agent**

Direct air cooling

**Generator voltage**

400 V

**Installation**

Outdoor

## CLIENT BRIEF

The client, **Energia Vulture Alto Bradano**, had two key requirements when they partnered with **EXERGY**.

Their first requirement was to dispose of waste from grape and olive production, and waste from the local wood processing industry using environmentally friendly methods.

Their second requirement was to operate their business in a more economically efficient way, and develop a secondary revenue stream by selling electricity back to the grid.

## THE SOLUTION

**EXERGY** provided a packaged ORC unit, which when combined with a thermal oil boiler would efficiently convert the agricultural waste into electricity. The ORC unit has an automated control system, ensuring minimal staff monitoring, thus making the operation simple to manage for the client.

The unit integrated well into the surrounding environment and met with the appropriate emission requirements.

The unit was air cooled and due to the inclusion of the **EXERGY** Radial Outflow Turbine, it operated at an extremely high efficiency level (up to 24%) compared with similar installations on the market.

